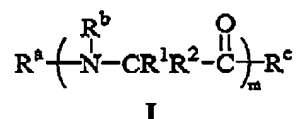


Listing of Claims:

1 - 12. (Canceled)

13. (Currently amended) A method of identifying peptoids in a library of different sequence peptoids which are effective in transfecting a cell with an oligonucleotide, the method comprising

(i) providing a library of peptoids having a plurality of unknown sequences and having the general formula I:



where

R^a is selected from the group consisting of alkyl, aryl, aralkyl, aralkenyl, and aralkynyl, any of which may be substituted with one or more groups X; hydrogen, -OH, -SH, -COOH, sulfonyl, and a lipid moiety, wherein said lipid moiety may be conjugated to a linker moiety, each R^b is independently selected from the group consisting of alkyl, aryl, aralkyl, aralkenyl, and aralkynyl, any of which may be substituted with one or more groups X; and hydrogen,

wherein at least one group R^b is not hydrogen;

R^c is selected from the group consisting of alkyl, aryl, aralkyl, aralkenyl, and aralkynyl, any of which may be substituted with one or more groups X; hydrogen, -OH, -SH, -NH₂, -NHR, -NH(C=O)R, where R is lower alkyl; sulfonyl, hydrazine, and a lipid moiety, wherein said lipid moiety may be conjugated to a linker moiety;

X is selected from hydroxy, alkoxy, amino, guanidino, amidino, alkylamino, alkylthio, halogen, nitro, cyano, keto, aldehyde, carboxylic acid, carboxylic ester, carboxylic amide, sulfonic acid and sulfonic ester;

at least one of R^a and R^c comprises a lipid moiety;

R¹ and R² are independently selected from hydrogen, lower alkyl, and lower alkoxy; and m is an integer selected from 2 to about 50.

~~(([i]) ii) contacting each ~~peptoid~~ a plurality of unknown peptoids in the library with an oligonucleotide, to form a plurality of peptoid-oligonucleotide mixtures, wherein said oligonucleotide is between about 10 and 50 nucleotides in length, and said different sequence peptoids include variations selected from different N-side chains, different terminal lipid moieties, and different distributions of neutral and cationic N-side chains;~~

(([[ii]] iii) contacting each said mixture with a cell;

(([[iii]] iv) screening each cell for transfection of the oligonucleotide, to identify transfected cells; and

(([[iv]] v) identifying transfecting peptoids in mixtures contacted with transfected cells.

14. (Original) The method of claim 13, wherein said library of peptoids is provided in an array of physically separated compartments.

15. (Currently amended) The method of claim 14, wherein said peptoids are supported on solid particles in said physically separated compartments.

16. (Currently amended) The method of claim 15, further comprising the step of releasing the peptoids from the particles in said compartments, prior to said contacting step (([i]) ii).

17. (Original) The method of claim 15, wherein each compartment contains a single particle, and each particle contains a single peptoid.

18 - 20. (Canceled)

21. (Currently amended) The method of claim 13, wherein, in step (([ii]) iii), each said mixture is contacted with a plurality of distinct cell types.

22 - 24. (Canceled)

25. (Currently amended) The method of claim [[24]] 13, wherein in formula I, R^a comprises a lipid moiety, and R^c is selected from $-NH_2$, $-NHR$, and $-NH(C=O)R$, where R is lower alkyl.

26. (Original) The method of claim 25, wherein said lipid moiety is a sterol.

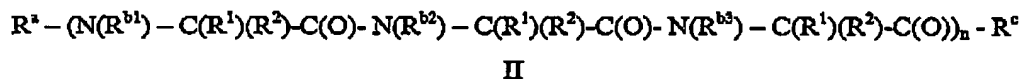
27. (Currently amended) The method of claim [[24]] 13, wherein in formula I, each of R¹ and R² is hydrogen.

28. (Currently amended) The method of claim [[24]] 13, wherein in formula I, at least one R^b includes a group which is cationic at physiologically relevant pH, and at least one R^b is uncharged at physiologically relevant pH.

29. (Previously presented) The method of claim 28, wherein said cationic group is selected from aminoalkyl, guanidino, amidino, imidazole, and pyridinium.

30 - 32. (Canceled)

33. (New) The method of claim 13, wherein said terminal peptoids having a plurality of unknown sequences have the general formula II:



where

R^{b1} is a non-cationic moiety, R^{b2} is a non-cationic moiety, R^{b3} is a cationic moiety; and n is an integer selected from 2 to about 16.

34. (New) The method of claim 13, wherein said peptoids comprise at least two different cationic moieties.

35. (New) The method of claim 13, wherein said library is synthesized by a mix-and-split protocol.

36. (New) The method of claim 13, wherein identifying transfecting peptoids comprises determining their sequence.

37. (New) The method of claim 36, wherein the peptoid sequence is determined by a mass spectrographic method.